Raymond Pollock
Late 1961- early 1990s

Introduction	MUSIC Welcome to the Dahlgren Centennial Celebration – A Century of Innovation. We hope that this and our many other products, events and offerings will showcase what Dahlgren has accomplished during its last 100 years. Throughout our history, we've interviewed some of the most prominent minds, leaders and innovators that have been here, and we're opening up the vault to share them with you this year. Today we are honored to listen to the story of Raymond Pollock. Mr. Pollock came to Dahlgren in 1961 and retired in the early 1990s. Hid podcast will focus on the early history of the Fleet Ballistic Missile Program and working on Tomahawk. Let's listen to Mr. Pollock…
Pollock	Where did I go to school? Well I was born in western Pennsylvania. I was actually born in McKeesport, which is close by there, too, but I grew up in Wilmerding, Pennsylvania and went in the Air Force after high school. I was in the Air Force for four years. Most of the duty was in England. I spent three years in England. I still have friends from over there. It was a great experience. I came back and used the GI Bill to go to the University of Pittsburgh, and I spent three years there and got a major in math and a minor in physics from the University of Pittsburgh and took a job down here.
Harman	How did you come to hear about Dahlgren?
Pollock	Dave Abernathy, if you know that name, was a recruiter, and he came to Pitt, and so I interviewed with him at him at Pitt. I think it was Dave; I'm pretty sure it was Dave Abernathy because he went all around the country a lot back in those days. It sounded good to me, a good place to go.
Harman	What year was that?
Pollock	I came to Dahlgren in '61. 1961. I was in the Air Force from '54 to '58, came to Dahlgren in '61, went into K Lab. My first supervisor was Bill Graves. Anybody ever heard of Bill Graves? He was a branch head, I guess, and John Walker was our division head. I got there just at the time when they were starting a new

	project, and it was called the Fleet Ballistic Missile Program, and they had one employee, Gerry Byron. So I went with Gerry, and he used to take me out to Minneapolis to CDC; they were doing the computer work at the time, the original work. And they were using CDC computers, militarized computers to go onto submarines. And so I got my foot in the door early. They wanted two or three of us over in the program at the time. And we gradually expanded and expanded and became what is today the Fleet Ballistic Missile Program I took time off in '65 and '66 to go to the University of Virginia. It was the first year they had a computer science program at Virginia. I was one of the first graduate students they had in computer science. I was one of the first people in the FBM Program. And I was in the program from '61 until '82. I was a branch head. There were two divisions. There was a Geoballistics Analysis Division, and there was a Program Division that did quality assurance, and we did the programming for the Fleet Ballistic Missile Program. I remember one of the highlights I had was addressing The original admiral of the Fleet Ballistic Missiles. And I gave him a talk on computing, what it meant, and what higher level language it meant, and what we were trying to do down here at Dahlgren. I thought that was a highlight. He was a very nice man. He was the original admiral, actually. It wasn't Raborn. And he had a stutter, of all things. One of the great stories that I know that I will reveal is he and John Walker, who also stuttered, together having a talk. I wasn't there, but I heard about it later. It was a good story. They had a little trouble conversing. But he was a very nice man and the leader of the FBM Program for quite a while.
Staton	At what point did General Electric…? I guess when I came in '69, virtually everything was GE. Didn't they even manufacture the computers?
Pollock	Yes.
Staton	That went on the MK 84 for the Polaris—
Pollock	I spent my time going to CDC in Minneapolis because they were doing the programming work on their computers, which were CDC computers, militarized CDC computers. The rest of the weapons system was GE. So I spent time out at Minneapolis at the Strutwear building, which is downtown Minneapolis. They had quarters like we used to have here, which was a clothing manufacturing building. They had two floors of the building, and that's where they did their programming at that time. We had people that would go out there and spend months at a time, as a matter of fact. I'd go out there myself and spend weeks at a time. At 19° below 0, that's a… [*laughs*]. That's what it was, my memory of

	being in downtown Minneapolis, it was 19° below 0.
Harman	You're still talking '61, '62, or '63, somewhere in there?
Pollock	'61, '62, something like that. And then I would go to Pittsville, Massachusetts, which is where GE was. And we would test the systems up there on the actual hardware that was going to go aboard the ships. And we got into the game, taking over for CDC and doing the rest of the programming after that. Dahlgren did the rest of the programming and still does to this day. '61 to '82, and part of that time, I was a branch head, a good bit of the time, of the Programming Branch. We did some things like try to revolutionize how we did things and do things in higher-level languages. I wrote a compiler, as a matter of fact, when I was in there. I was head of the division, but I wasn't head at that time. I wrote a partial compiler that would take arithmetic statements and put them into computer programming.
Harman	Who was running the FBM Program at that time?
Pollock	There were two divisions. They finally came up to the divisions. Dave Brown ran the Analysis Division, and Dick Gros ran the Programming Division, the division that did the quality assurance and programming and engineering. All the engineering stuff was in there. The analysts and the people that did the equations and programs and all of the research, so to speak, on geoballistics, which was necessary to know how to do it, were in the Analysis Division, which had people like Carlton Duke and Ray Hughey and people like that in that group. And our group was this group along with Jack Carlock, who was the head of the facilities. Walt Warner was our branch head. He eventually went down to the Programming Branch, which was in K, but it was for the general purpose computers in K. It wasn't for the Fleet Ballistic Missile Program, and I took over as the branch head. I don't have an actual date as to when I did that. I was branch head for a long time until '82, and a new program had sprung up. A guy named Wayne Harman and Jim Blackwelder came and visited me one day in my office and said, "We need some help. We're trying to establish a new program for the Joint Cruise Missile Project Office, and we need some people to put into the Air Force version of it," which was a ground-launched cruise missile. I like to explore new things, so I gave them two people, Sonny Akin and Becky Edmondson, and they worked on evaluating the Air Force system, helping on that part of it. And then gradually we became a program office—well, not really. We became a working group, I guess. And I left my job as a branch head and took over this job as head of the Tomahawk Cruise Missile Program, and we started hiring people. We got a little support. Dave Brown was a big help, I

	think, in pushing it with Jim and Wayne and getting some input with the Program Office, which is up in Washington. It was not part of NAVSEA; it was a separate program office. The Tomahawk Cruise Missile office, which is a little different.
Harman	It was a PM-3, or something like that.
Pollock	The FBM Program was not in NAVSEA either, although, kind of we were supposed to be working for NAVSEA at NWL [Naval Weapons Laboratory}. The biggest program that we had was the FBM Program at the time. It was out of the Program Office, which is eventually what the cruise missile became—a program office separate from NAVSEA and NAVAIR [Naval Air Systems Command] and so forth. And it was up across the street from NAVSEA. It was located up there in Crystal City, and so we spent a lot of time in Crystal City back in those days. We started hiring people, and some early hires were… I think we brought Art Green aboard fairly soon after that, and we hired Gay Galyen, Peggy Brown, and we hired graduates out of Mary Washington.
Harman	Were you ever involved with the efforts by some of the contractors to take over the work down here?
Pollock	That was always the case.
Harman	That came up a lot. Every year or two, somebody wanted to take over the work down here.
Pollock	We had a pretty solid group that we worked with in SP [Special Programs] uptown. Dave Gold—I must mention Dave. He was our technical guru. And Bob Mitchell and people like that that were in the Program Office. And we started doing such good work for them, I think, that they supported us and liked our presence. It was a different way of doing business than what a lot of the programs were. A lot of the programs were supporting the Program Office and supporting the contractors doing things, like Aegis for example. Aegis—the contractor, RCA, did most of the work on the program and things like that over the years. I think. That was my opinion anyway. We provided a support activity. We had a $16.8 million budget in ’84, and in ‘86/’87 it climbed to $18 million dollars. That was pretty significant. That was a lot of money. And we had lots of MILCONs [Military Construction]. Mr. Harman was a big helper in getting those MILCONs, I’ll tell you that.
Harman	We started Tomahawk in K Department.
Pollock	Correct. It was in K Department for two years, ’82 to ’84. We were hiring people and bringing them on board and sloughing them into offices where we could.

	We got an old garage to bring equipment into. It was right by Hangar 2. If you recall Hangar 1, right by Hangar 1 around that curve, there was a little building sitting there. It was a garage at one time. We turned that into a lab. When we went into N Department, we went to trailers, and we were in trailers for a while close to the N Department building, which is… 1500?
Staton	Yes, 1500's the building.
Pollock	And we were in an annex of 1500 and sharing a trailer with some other people from either E Department or from another part of N. I can't remember where they were. Bill Fontana and those people. And then we finally got our own trailer over by Hangar 2, and we stuffed everybody into that trailer. We were right in front of Hangar 2, and it was a trailer.
Harman	The hangar was 194, and we were 194T.
Pollock	Yeah, that's what they called it, 194T. When we went into the trailers, we had probably thirty or forty people that we put into those trailers. We had one office where the people had to go in by the numbers because there was no… The desks were right next to each other. You had to go through the other desks. That was Jim Blackwelder's shop, if you recall--
Harman	Desks were more important than people.
Pollock	--and Charlie Naples and people like that. We had three or four together, but they had to get in. They had to get in in order. We were really crowded. We had very little room.
Staton	Were those trailers located where the current Tomahawk Building is?
Pollock	We had a little building there that we used for a lab. The first MILCON we got was to improve that laboratory so we could get out of the trailers. I'll tell you the story I was going to tell you before. Admiral Hostettler came down, and we briefed him, and we took him for a tour, and we took him down to our garage. He blew up. He really was upset when he saw what working conditions we had. He chewed out Oliver Braxton. He was so mad. But he helped us get those MILCONs. He understood that we were important to his program. So the briefing worked, but it worked in the wrong way from the Center point of view because the Center looked like they weren't supporting us enough from his point of view. He was sending money, and he intended to send more, but he helped us get those MILCONs, I think. Wayne would know more about that, I

	think, than I would. He and Calvin [Coates] worked MILCON pretty good. But that was a turning point, when he came down to visit us and saw what kind of conditions we had in his lab. It was an old garage and it was stuffed with equipment and people. It was not ideal conditions, and so we ended up with three MILCONs, three military construction projects. One [was] to improve the laboratory next to our trailer, we had another old building there, and we made that the laboratory. And then the second one was the big building, which is attached to it over there, still is over there. 1580. And then there's been a third one since then, another MILCON, to put another side to that building. That was after I left. Anyway, '82 to '84, we were in K Department, and then we moved to N Department. We became a division in N Department at that time, I guess. And our budget kept climbing up to $18 million, as I mentioned already. People-wise, we were around 125 to 150 people eventually in the new building when we had room for then, but we started with a much smaller group than that. And we hired a lot of people from the outside. We got a lot of people that wanted to come work for us because we were doing the right kind of work, I think, original work. Groundbreaking for the Tomahawk weapon system development facility was October of '87. Well, let me tell you about the Tomahawk Program. I was the program manager of the Tomahawk Program. We had parts from almost all the departments working it. We had systems safety doing safety things; we had the Hangar 2 [*Misspoken. Actually is Hangar 1 / Building 150*] people doing…
Harman	HERO [Hazards of Electromagnetic Radiation to Ordnance]?
Pollock	HERO, yes, hazards of electronic warfare. Joe Miller and people like that worked for me. That was out of Hangar 1, I guess. In Hangar 2, we had a group from F Department that worked on an anti-submarine warfare part of the program, if I recall. You remember that? They were right across the street from us when we were in that trailer. We used to work with them. Peggy Brown eventually moved over there from our group and became a branch head over there. That was Harry Lewis and his crew over there. So they were part of the program; they were doing programming, too, original work and original analysis. Norm Porter, Manley Turner, people like that were over there, and they worked for us, too.
Harman	That was the OTH part of the program.

Pollock	Right, "over-the-horizon." I was program manager over all that. One of the biggest compliments that I ever—that I really liked was Lem Hill, one day, picked me up. I was over at the Officers' Club. He picked me up in his car. He says, "Come ride with me." And he says, "I didn't think you would be able to handle that job, but you've done a good job." That really pleased me. He was the technical director.
Staton	So what year did you retire?
Pollock	I guess in '91 I was the E50 division head, so I guess I was retired by '93. That sounds about right. '92 or '93. I had a varied career that I was in: K Department, N Department, and E Department, and I worked with all the other departments, too, including White Oak. When I was the division head of that last division, I had one branch at White Oak and two or three branches at Dahlgren. I would work like three days at Dahlgren, and then I would go up to White Oak for a couple of days a week or every two weeks at White Oak. It was a broadening experience, but I was tired of that pretty quick. And of course they got rid of White Oak. I thought I had a pretty broad experience both in K Department and in N Department and in support departments. In the job in Tomahawk, I got to know an awful lot of people all over the base, in finance departments, everywhere. I was pleased with my career. I thought it was—
Harman	Well what'd you do after you retired?
Pollock	I rested for quite a while! I'm still active in Fredericksburg and am part of the Fredericksburg Personal Computer Users Group and things like that, but I haven't been doing much with the base. I come over for retirement ceremonies of my friends and get to see people that way occasionally. I retired. I shouldn't say that. When I retired, I went to work for a group that was supporting the base and working out of the old bank building in downtown Fredericksburg. SCCI. And we were in the basement of that building, the old bank building. And then we moved up to the floor that has the balcony looking out over the street. And I worked for them for two or three years, but I worked part-time. I could walk from my house, across the field. It was a mile, and I would work for five hours or something and walk home. It was nice. I wasn't called upon to come down to Dahlgren too many times. It was nice to be able to do that from my house. I got hired for a little bit by one of the companies up in Crystal City to try to help

	them win a contract with NAVSEA. It was an Aegis-type contract; it had something to do with Aegis. It was one of the Aegis contractors. I worked for them for maybe six months and used to commute up there, but that can get old really fast. I didn't really care for that too much. Dahlgren was a wonderful experience. I had a wonderful career here. And I still know a lot of people and love them, too. They're a wonderful bunch of people that live around here. [They] even get me on the base occasionally. I had a pretty broad career. I've tried to tell you a few stories that were worthwhile, I thought. Looking through my papers, I found I had a lot of information. I didn't know dates. I'm not good at dates, so I had to go back and try to manufacture them. I wrote in some things here. I gave talks at the War College, too. I took some courses here at the War College. War College courses that were given here. I think they probably still do that at the new Mary Washington joint center out there. I am a member of the Dahlgren Museum. I haven't been real active…
Harman	One question I wanted to ask you. You mentioned Dave Gold in passing. What do you remember about Dave? What memory do you have of Dave?
Pollock	I think he was brilliant, probably. He was a very, very smart man. He was our mentor. He was the guy that brought us along and taught us things and argued with us and kept us straight, I think. He had some great helpers. John Cate was a real good friend of mine, and he worked for Dave. And Bob Mitchell, and [Dick] D'Antonio. D'Antonio would fall asleep at every meeting and wake up and ask a question. Nice fellow. It was a good staff. It was a good staff because they had a good technical head, who was Dave Gold. That was in the fire control part of the Project Office.
Harman	SP-23.
Pollock	I remember him fondly because he was a good person, a nice person, and he was real smart, and he taught you a lot. He really did. One of the things we spent an awful lot of time on was "what ifs." I consider the FBM Program the outstanding program in the U.S. Navy, maybe in the U.S. government, the top weapons system ever produced because it's never been fired, never been used. It's never been used in anger. It's never been used at all, and it's still out there, and it's still cruising around out there as a deterrent. It's a deterrent. It's been a successful deterrent that hasn't had problems.
Harman	They still launch missiles every month or something.
Pollock	Yeah, but I consider it the most successful program I've heard of because it's

	never been used in anger.
Harman	Never had a bad test, never had a failed test.
Pollock	That's right. I couldn't have better accolade than that, to have been involved in a program that was that successful. The cruise missile, on the other hand, has been used successfully in the first Iraq War. It's a fantastic program and a fantastic weapon.
Harman	I think they still use it.
Pollock	Yeah, so I've been involved with two really good programs. The Aegis program is another good program, I think. I've had peripheral work with them, but not much.
Harman	They had some missile problems in the beginning of the Polaris program, right?
Pollock	Probably. I don't know.
Harman	I remember one where they launched the missile, and it rolled over and went underwater again. It came back up, and they pushed the destruct button, but it was too late because it was already in the water again. And it did that three or four times, just porpoised. And then they guy [said]. "I just held the button down until it came out of the water again and blew it up."
Pollock	I never heard that. I've rode a submarine, of course. I think some of the interesting things to talk about is when we first started the program, the FBM Program, we used to be out on the submarines and we'd go ride the submarines. And they wouldn't let the women aboard. We had to go to places like Charleston, and they wouldn't let the blacks in the motels down there, let our black workers stay in the same hotel with us, so we'd all move to a different motel. We finally got women aboard, and they couldn't ride the submarines when they went out to sea, but they could go on in port and work on the computers. I remember Maxilee [Clark] being one of the ones they wouldn't let aboard. The Navy's come a long way toward accepting women, which they didn't do.
Harman	Becky Edmondson had some experience like that too, didn't she?
Pollock	You have to keep pushing on that sort of thing. You're hurting the program by not letting our technical people get aboard and do things. That's a good story, too. And the story about trying to integrate—Johnny Smith was a wonderful person, and when we'd go to Charleston, they wouldn't let him stay in the motels with us. He'd say, "That's alright. I understand. I'm from down south,

	and I understand." And we said, "No, we don't understand or accept it either." He and Mac [McCoy] and Leamon [Smith] and people like that were just good people. So we lived through that era too, the segregation era during this period, and it affected the program badly. But we persisted, and gradually that changed.
Harman	Well, those are important stories for the history of this base, the integration stories and the roles of women. I mean, the FBM Program is where it began, really because that's where the women started working.
Pollock	Well, not really. The women started working with Rosie the Riveter. You forgot that part [*laughs*]. One of our Elder Studies talks was on the four Rosies, and this guy talked about Rosie the Riveter. That was just recently, a couple of months ago. That was a big break, too, to get women on the production line, producing things. They didn't use to do that. I hope they taught you that at Mary Washington. Women come a long way.
Harman	This base had a lot of women during World War II that worked on base.
Pollock	I don't see what we would've done here at Dahlgren if we hadn't had women working. If we'd had that kind of problem of non-acceptance of women in the workforce, we would've had a hell of a time getting a job done. Some of our best people were women working on the FBM Program. And I noticed in the last telephone book that I had was that a lot of them are branch heads now.
Harman	They are in Tomahawk for sure. Branch heads, division heads.
Pollock	And FBM, too. And this was some years ago. A lot of these women have retired now, like Janice Cooper and a lot of people like that. They were branch heads at least. They got that far. That's good. They should've been further. They should've been division heads. And Carol Wilson, was when I moved over to E Department, she was the division head, and she still worked on the program after they put me in charge. I hope with her compliance. She was certainly nice about it. And she was a good person, really very smart, very good.
Harman	Well, we appreciate you coming over to talk to us today. It's been a good session.
Pollock	I hope it was helpful.
Conclusion	Thank you for listening to this week's Dahlgren Centennial Podcast, and hopefully you have learned another interesting aspect of what our people accomplish for the Navy and for our nation.

	We will continue sharing how Dahlgren is a one-of-a-kind location where innovation is heralded as the hallmark of each individual. PAUSE Tune in next week to hear from Captain Sheila Patterson, who served as the Commander of Naval Surface Warfare Center at Dahlgren from 2007 to 2010. Captain Patterson will discuss her experiences as a woman in the military and the highlights from her tenure at Dahlgren. Thank you for celebrating this century of innovation with us at Dahlgren. MUSIC